

Translation

PATENT COOPERATION TREATY

PCT/DE2003/002598



PCT/PTO 11 FEB 2005

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference W1.1866PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE2003/002598	International filing date (day/month/year) 01 August 2003 (01.08.2003)	Priority date (day/month/year) 12 August 2002 (12.08.2002)
International Patent Classification (IPC) or national classification and IPC B41F 13/54		
Applicant KOENIG & BAUER AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand. 02 March 2004 (02.03.2004)	Date of completion of this report 27 October 2004 (27.10.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
1, 2, 2a _____, filed with the letter of 17 September 2004 (17.09.2004)
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of 17 September 2004 (17.09.2004)
1-16 _____, filed with the letter of _____
- ☒ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
1/1 _____, as originally filed
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. _____ 17-21
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

2. Citations and explanations

1. Claim 1:

1.1. Prior Art:

Document EP-A-0 888 887, which is cited in the description, discloses a printing machine with all of the features contained in the preamble of independent claim 1.

1.2. Problem:

Producing a printing machine with a plurality of printing units that permits a compact design and shorter distances for the web of printed material to travel between printing units and folding apparatuses.

1.3. Solution:

The specific combination of all of the features of claim 1, especially the specific arrangement of the printing units side by side in an axial direction, the arrangement of a space between specific structural components and the aligned arrangement of two folding apparatuses according to the characterizing

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part of claim 1, is not described or suggested by the prior art, and so the invention involves an inventive step within the meaning of PCT Article 33(3).

2. Dependent Claims 2 to 16:

Dependent device claims 2 to 11 and 16 define advantageous embodiments of the printing machine according to independent claim 1, and method claims 12 to 15 define uses for a printing machine with all of the features of claim 1.

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Specification

Printing Press with Several Printing Groups

The invention relates to a printing press with several printing groups in accordance with the preamble of claims 1.

A web of material, for example a web of fabric to be imprinted, or a paper web, is imprinted in each printing group of such a press and, following their passage through the dryer, the webs are combined into a strand, which is divided into individual batches.

Customarily, the imprinted webs are conducted out of printing groups of such a press, which are placed aligned in a first direction, in a direction which extends in a plane defined by this first direction and a vertical line.

This way of guiding the web raises a lot of problems. If it is intended to assign its own dryer to each printing group for drying the web imprinted in it, the option basically exists to arrange the dryer vertically above the printing group in an extension of the latter, so that extremely high buildings are required for the placement of such a printing press. If, on the other hand, it is decided to conduct the webs horizontally through the drying devices, an arrangement results, wherein the dryers are placed between the printing groups and therefore the press has a very great length in the alignment direction. This leads to greatly different web lengths between the individual printing groups and the folder, so that the printing groups must be operated with a large phase offset in order achieve the correct

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position in respect to each other of the webs at the folder.

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Although a more compact construction could possibly be achieved by providing a common dryer, through which the webs from all printing groups are conducted together, this solution has the disadvantage that, depending on the placement of the dryer in respect to the printing groups, webs must be conducted between the printing group and the dryer over long distances and must be supported, or must be rerouted several times. In the course of this, smearing of the not yet dry ink at the deflection or support rollers can occur, and therefore a loss of quality of the printed products.

DD 58 311 discloses a rotary printing press, wherein a dryer is placed downstream of each printing group, and wherein several folders are arranged.

DE 40 12 396 A1 and DE 44 08 027 A1 show web-fed printing presses with dryers and folders, wherein the axes of rotation of the folding cylinders of the folder extend parallel with the longitudinal direction of the dryer.

EP 888 887 A2 discloses a rotary printing press with several printing towers and several folders. The axes of rotation of the folding cylinders extend parallel in respect to the axes of rotation of the printing cylinders.

A printing press with several printing groups, which are arranged in the axial direction of the cylinder shafts, is known from DE 198 806 C, wherein an inlet of the formers is arranged transversely in respect to the printing cylinders.

The object of the invention is based on creating a printing press with several printing groups.

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This object is attained in accordance with the
invention by means of the characteristics of claim 1.

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It is a particular advantage of the press that it allows a compact construction with short paths of all webs to be imprinted between the printing group and the folder. Since the imprinted webs exit from the printing group transversely in respect to the alignment direction of the printing group, the dryers can be arranged transversely in respect to the alignment direction of the printing group, and therefore neither require a large structural height nor large distances between the printing groups in the alignment direction.

The axes of the cylinders delimiting the printing gaps

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Claims

1. A printing press, having a plurality of printing groups (01, 02, 03, 04) and at least two folders (17, 18), wherein the axis of rotation of a first transverse cutting cylinder (23) of the first and second folders (17, 18) and the axis of rotation of at least one cylinder group delimiting a printing gap are arranged to extend parallel, characterized in that, in respect to the axial direction of its cylinders, at least one printing group (01, 02, 03, 04) is arranged next to another printing group (01, 02, 03, 04), that the folders (17, 18) are respectively arranged in a space between two structural components each consisting of a printing group (01, 02, 03, 04), a dryer (09) and a turning bar (12, 13, 14, 16), that the folders (17, 18) are arranged aligned in the direction of the axis of rotation of the transverse folding cylinder (23).

2. The printing press in accordance with claim 1, characterized in that a longitudinal direction of the dryer (09) is arranged transversely to the axis of rotation of at least one cylinder group delimiting a printing gap.

3. The printing press in accordance with claim 1 or 2, characterized in that the printing groups (01, 02, 03, 04) each have a web guidance extending from a lower to an upper section, and the dryers (09) are arranged at the height of an upper section.

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4. The printing press in accordance with one of the preceding claims, characterized in that the dryer (09) is arranged to bridge a space between the printing groups (01, 02, 03, 04) and at least one folder (17, 18).

5. The printing press in accordance with claim 1,

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characterized in that at least one roll changer (06) for supplying the printing groups (01, 02, 03, 04) with the material (07) to be printed is housed in the space.

6. The printing press in accordance with claim 1, characterized in that a roll changer (06) is arranged underneath a dryer (09).

7. The printing press in accordance with claim 1, characterized in that the printing press contains four structural components.

8. The printing press in accordance with claim 1, characterized in that the first folder (17) is arranged centered in respect to all structural components.

9. The printing press in accordance with claim 1, characterized in that the second folder (18) is arranged between the first structural component (01, 09, 12) and the second structural component (02, 09, 13).

10. The printing press in accordance with claim 1, characterized in that the first folder (17) and the second folder (18) are arranged in adjacent spaces.

11. The printing press in accordance with claim 1, characterized in that the first folder (17) and the second folder (18) are not arranged in adjacent spaces.

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12. The method for using a printing press in accordance with claim 1, characterized in that in one mode of operation two folders (17, 18) are operating, in another mode of operation only one folder (17, 18).

13. The method for using a printing press in accordance with claim 1, characterized in that the printing press is a telephone directory press.

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14. The method for using a printing press in accordance with claim 13, characterized in that the printing press has a width of six pages.

15. The method for using a printing press in accordance with claim 13 or 14, characterized in that the plate cylinders have a circumference of four pages.

16. The printing press in accordance with claim 1, characterized in that a cooling roller group (11) is assigned to each dryer (09).